



# The use of the second-generation HIV surveillance approach in understanding the HIV epidemic in the military: Lessons from other employment sectors

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# Overview

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- **Case Study 2: HIV prevalence, HIV incidence and risk behaviours among educators in South Africa**
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# Introduction

- HIV prevalence rates among most-at-risk populations such as sex workers, men who have sex with men, drug users *and the military* in most African countries are mostly a matter of speculation.
- It is generally believed that HIV infection rates among soldiers in most sub-Saharan African countries with advanced HIV/AIDS epidemics are at least twice and up to five times that found among civilians in the general population (Beresford, 2001; Okee-Obeng, 2001).
- This is because soldiers tend to be young, sexually active, either live in barracks usually under cramped living conditions or are away from home during deployments, and often suffer from boredom and a shortage of women to socialise with when off-duty or are surrounded by opportunities for sex with prostitutes or casual multiple partners.

# Introduction (contd)

- In the case of the military, there is also some sensitivity surrounding the issue of HIV/AIDS especially because it is directly linked to national security.
- It is often further compounded by the lack of reliable information as very few if any epidemiological studies are carried out.
- Consequently, the free press in some countries do speculate infection rates that are sometimes outrageously too high.
- For example, in South Africa the prevalence of HIV infection among soldiers was estimated to be as high as 60% in 1999 (Kirk, 2000)

# The Second-generation HIV surveillance approach

- In the past national HIV prevalence estimates amongst all sectors of the population were based on modelling using an earlier version on the Epidemic Projection Package (EPP) which mainly used data from antenatal clinic (ANC) sentinel surveys conducted among pregnant women only.
- One of the consequences of using ANC data from pregnant women was that they tended to overestimate HIV prevalence rates in the general population including amongst men and children especially in countries with generalised epidemics.
- This also resulted in overestimating the total global burden of HIV.
- Consequently, adjustments to both national and global estimates of HIV prevalence have since been made by UNAIDS during the past few years.

# **The Second-generation HIV surveillance approach (contd)**

- **Recently, there has been improvement in the data obtained especially using population-based surveys of both men and women of all ages which employ the second-generation surveillance approach recommended by UNAIDS and WHO.**
- **The second-generation surveillance approach combines biological and behavioural surveys which allows for better understanding of the magnitude and scope of the HIV epidemic (both prevalence and HIV incidence) among members of the general population as well as their determinants.**
- **The same approach has been recently used by our research team in different sectors of employment in South Africa such as among educators in public schools and private security guards (and also lawyers in both public and the private sector).**

# The Second-generation HIV surveillance approach (contd)

- HIV prevalence among educators and private security guards just like among soldiers has been a subject of great speculation and has previously been thought to be much higher than amongst the general population thus also qualifying the two sectors as MARP for HIV infection just like the military.
- The second-generation surveillance approach used provides more accurate statistics on both HIV prevalence and HIV incidence as well as an understanding of the key drivers underlying the HIV epidemics among employees in the employment sector concerned to enable them to mount a more effective fight against the spread of new HIV infections and also provide adequate treatment and care for employees living with HIV/AIDS who require them.
- We believe that the same model that could also be used in the military in individual AU member states for similar purposes.

# Case Study 1: HIV prevalence and risk behaviours among educators in South Africa

Study of determinants of supply of and demand for Educators in Public Schools

“Education for Life Project”







# The Health of our Educators

A focus on HIV/AIDS in South African public schools

Edited by O Shisana ScD, K Peltzer PhD, N Zungu-Dirwayi MA and J Louw BA



Report funded by and prepared for the  
Education Labour Relations Council



# The Health of our Educators

A focus on HIV/AIDS in South African public schools

PUBLIC SCHOOLS SURVEY 2004/5

Edited by O Shisana ScD, K Peltzer PhD, N Zungu-Dirwayi MA and JS Louw MA

Report prepared for the  
Education Labour Relations Council



Report prepared by a research consortium  
comprising the Human Sciences Research Council  
and the Medical Research Council of South Africa



# Methodology

- **National survey: random selection of 1 766 schools out of 26 713 schools**
- **Used second-generation surveillance approach:**
  - **Questionnaires: institutional and individual**
  - **HIV test: choice of blood or oral; CD4 count**
- **Anonymous, bar-coded questionnaire and HIV test results**
- **21 358 educators were present on research day**
- **97% agreed to be interviewed; 83% gave a specimen for HIV testing**

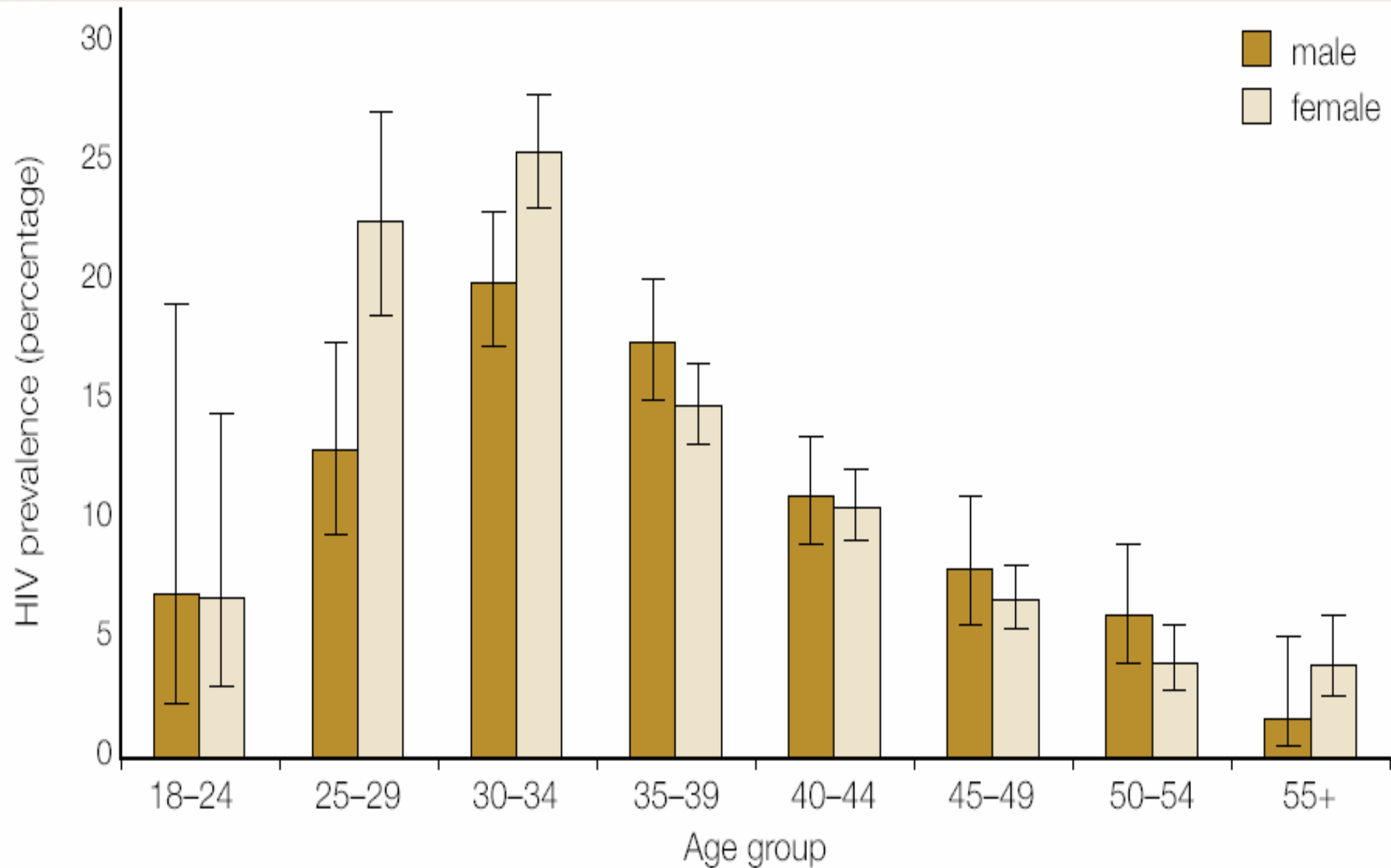
# Distribution of selected schools



## *HIV prevalence among South African educators, 2004*

CHARACTERISTICS	N	HIV positive (%)	95% CI
Total	17 088	12.7	12.0–13.5
<i>Sex</i>			
Men	5 455	12.7	11.6–13.9
Women	11 621	12.8	12.0–13.6
<i>Race</i>			
African	12 022	16.3	15.5–17.1
White	2 165	0.4	0.2–0.8
Coloured	2 309	0.7	0.4–1.3
Indian	533	1.0	0.5–2.1
<i>Age</i>			
<24	240	6.5	3.4–12.0
25-34	4 282	21.4	19.9–23.0
35-44	7 443	12.8	11.8–13.8
45-54	4 274	5.8	5.0–6.7
55 and above	842	3.1	2.1–4.6

# HIV prevalence among educators by age and gender, South Africa 2004

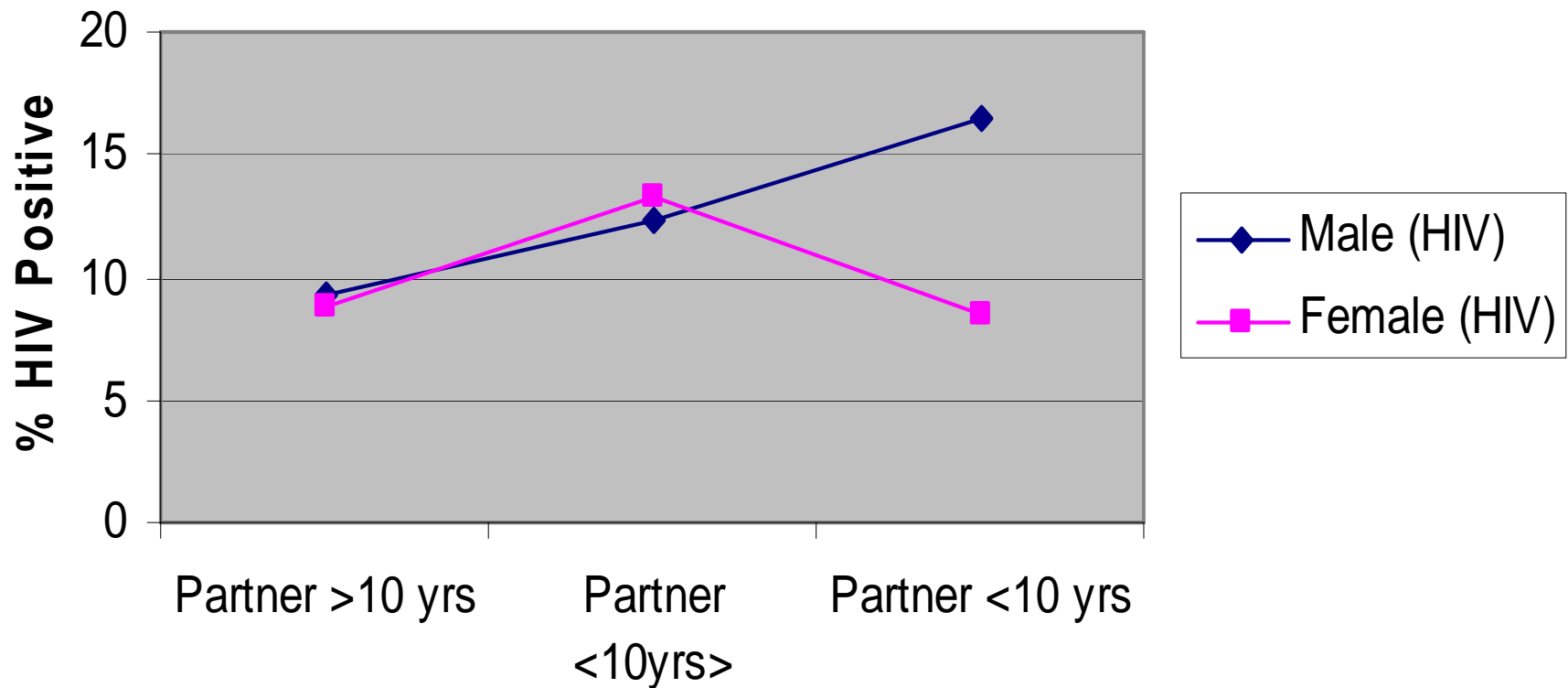


# Frequency of condom use with regular partner in the past year amongst HIV positive- South African educators, 2004

	Consistency of condom use among those who are HIV Positive				
	Every time	Almost every time	Sometimes	Never	Don't know
<b>Aware-ness of HIV Status</b>					
<b>Know HIV status (%)</b>	<b>29.8</b>	<b>7.3</b>	<b>36.4</b>	<b>26.5</b>	<b>0</b>
<b>Don't Know status (%)</b>	<b>26.1</b>	<b>5.7</b>	<b>33.9</b>	<b>34.2</b>	<b>0.3</b>

# Age mixing and HIV status by sex of educator, South Africa 2004

## Age mixing and HIV status by sex of educators, SA 2004



# *Mobility and HIV status*

MOBILITY	HIV POSITIVE		95%CI
	n	%	
In past 12 months been away from home for more than one month			
Yes	328	17.8	15.8-20.0
No	1710	12.1	11.4-12.9
Number of nights per week usually stay away from home			
None	203	8.6	7.2-10.4
1-2 days	77	16.5	12.8-21.0
3-4 days	87	16.7	13.5-20.5
5 days	122	20.5	19.9-24.7
6 and more days	107	27.6	23.0-32.7





# Case Study 2: HIV prevalence, HIV incidence and risk behaviours among private security guards in South Africa

**The SASSETA\* HIV/AIDS Impact Assessment Study: *The Impact of HIV/AIDS and Responses in the Private Security and Legal Services Industries in South Africa.***

**Note: SAFETY AND SECURITY SECTOR EDUCATION AND TRAINING AUTHORITY (SASSETA)**

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# Overview of the study

## Sample

- 638 companies sampled for the main study (Original target 5000)
- 38 companies participated
  - 15 Private security companies
  - [23 *Legal services*]

## Response rates: Final sample 3276

- 2849 private security
- [427 *legal services*]

## Ethical considerations

- Confidentiality of respondents and companies who participated in the study was assured.
- Participation of both companies and their employees was voluntary.

# HIV prevalence among private security employees

Variable	N	HIV+ %	95% CI
<b>Overall</b>	<b>2224</b>	<b>15.9</b>	<b>11.6 – 21.4</b>
<b>Males</b>	<b>1599</b>	<b>17.3</b>	<b>13.7 - 21.6</b>
<b>Females</b>	<b>625</b>	<b>12.3</b>	<b>6.7 – 21.7</b>
<b>Race</b>			
<b>Africans</b>	<b>1274</b>	<b>27.3</b>	<b>22.3 – 32.9</b>
<b>White</b>	<b>428</b>	<b>0.2</b>	<b>0.02 – 2.4</b>
<b>Coloured</b>	<b>353</b>	<b>1.1</b>	<b>0.6 – 2.1</b>
<b>Indian</b>	<b>168</b>	<b>0.6</b>	<b>0.2 – 2.0</b>
<b>Province</b>			
<b>Western Cape</b>	<b>446</b>	<b>3.4</b>	<b>1.7 – 6.6</b>
<b>KwaZulu-Natal</b>	<b>460</b>	<b>22.8</b>	<b>13.2 – 36.6</b>
<b>Gauteng</b>	<b>1318</b>	<b>17.8</b>	<b>14.8 – 21.2</b>

# HIV prevalence among private security employees (contd)

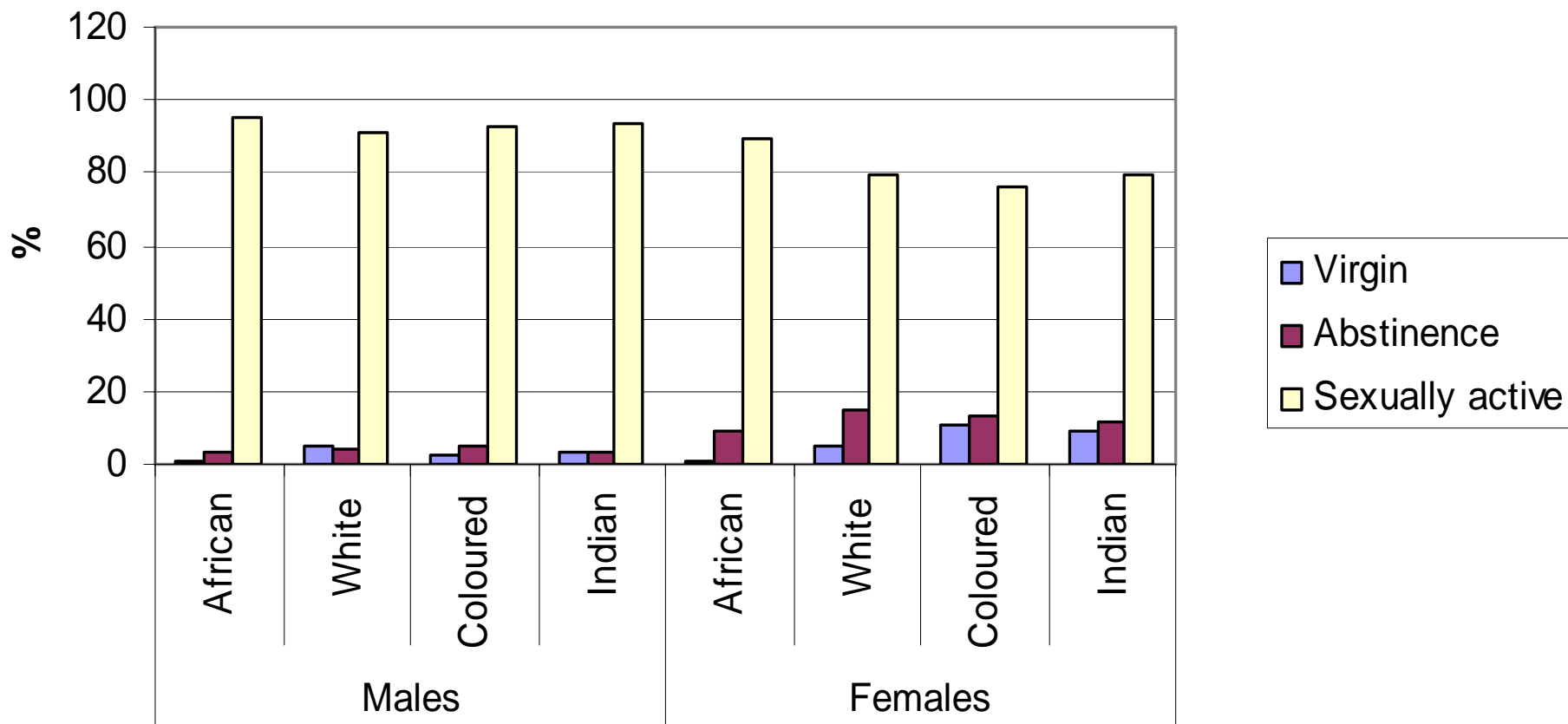
Variable	N	HIV+ %	95% CI
<b>Age group (years)</b>			
<25	303	7.3	3.4 – 15.0
25 - 49	1814	<b>17.9</b>	13.3 – 23.5
50+	107	7.5	3.7 – 14.5
<b>Marital status</b>			
Never married	1013	19.7	14.1 – 27.0
Married or cohabit	1038	12.9	9.8 – 16.8
Widowed	34	<b>29.4</b>	16.3 – 47.2
Divorced or separated	133	6.8	2.5 – 17.4
<b>Category of employees</b>			
Senior officials	254	5.1	3.0 – 8.5
Technicians	164	7.9	5.2 – 11.9
Service worker	1177	<b>21.8</b>	17.8 – 26.5
Laborer	49	<b>24.5</b>	11.5 – 44.8
Learner	61	14.8	6.7 – 29.5
Others	495	9.5	4.7 – 18.3

# Residence, shifts and HIV among private security employees

Living in single sex hostel	N	HIV+ %
Yes	44	29.5%
No	2179	15.6%
Working shifts		
Yes	1079	20.9%
No	1130	11.2%

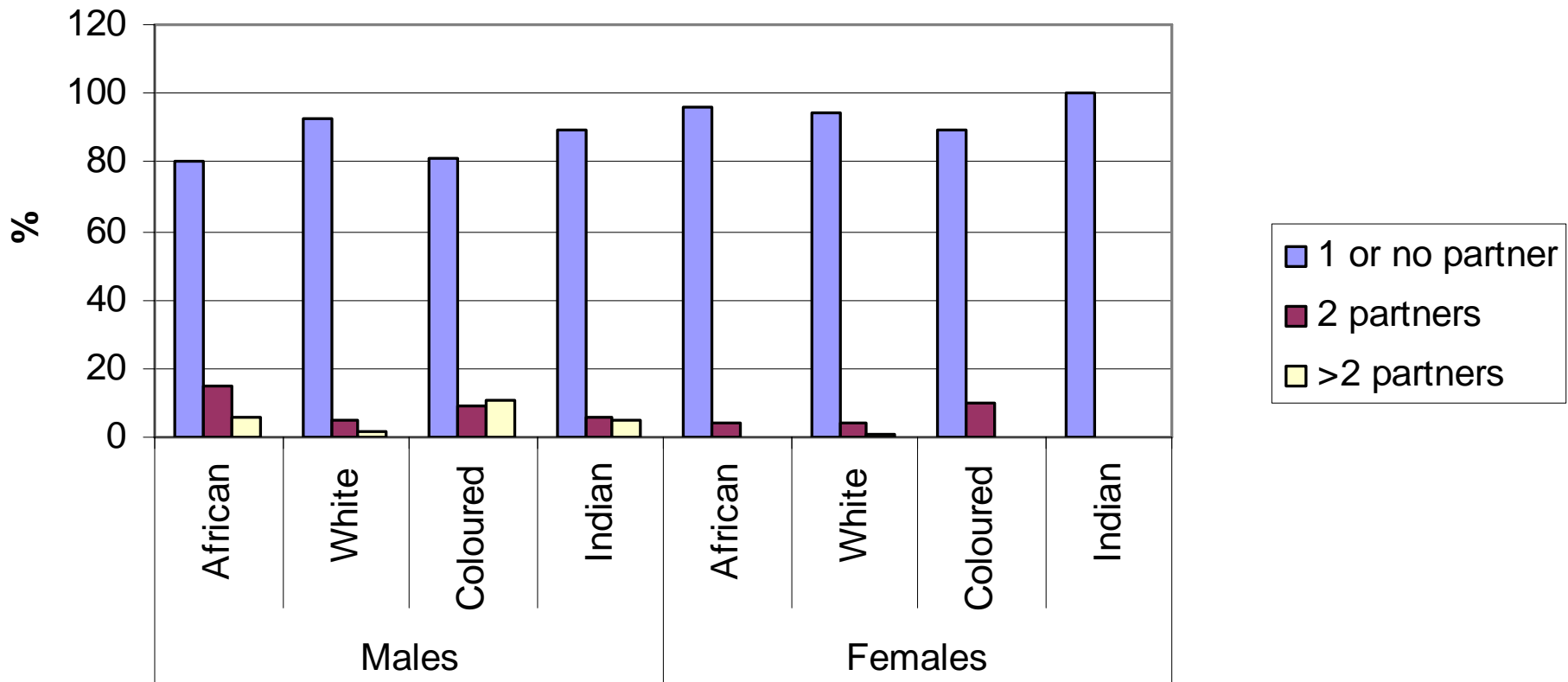
# Sexual activity among respondents from private security services

## Number of sexual partners of respondents in the past 12 months by race



# Concurrent sexual partnerships among respondents from private security services

Number of sexual partners of respondents in the past 12 months by race

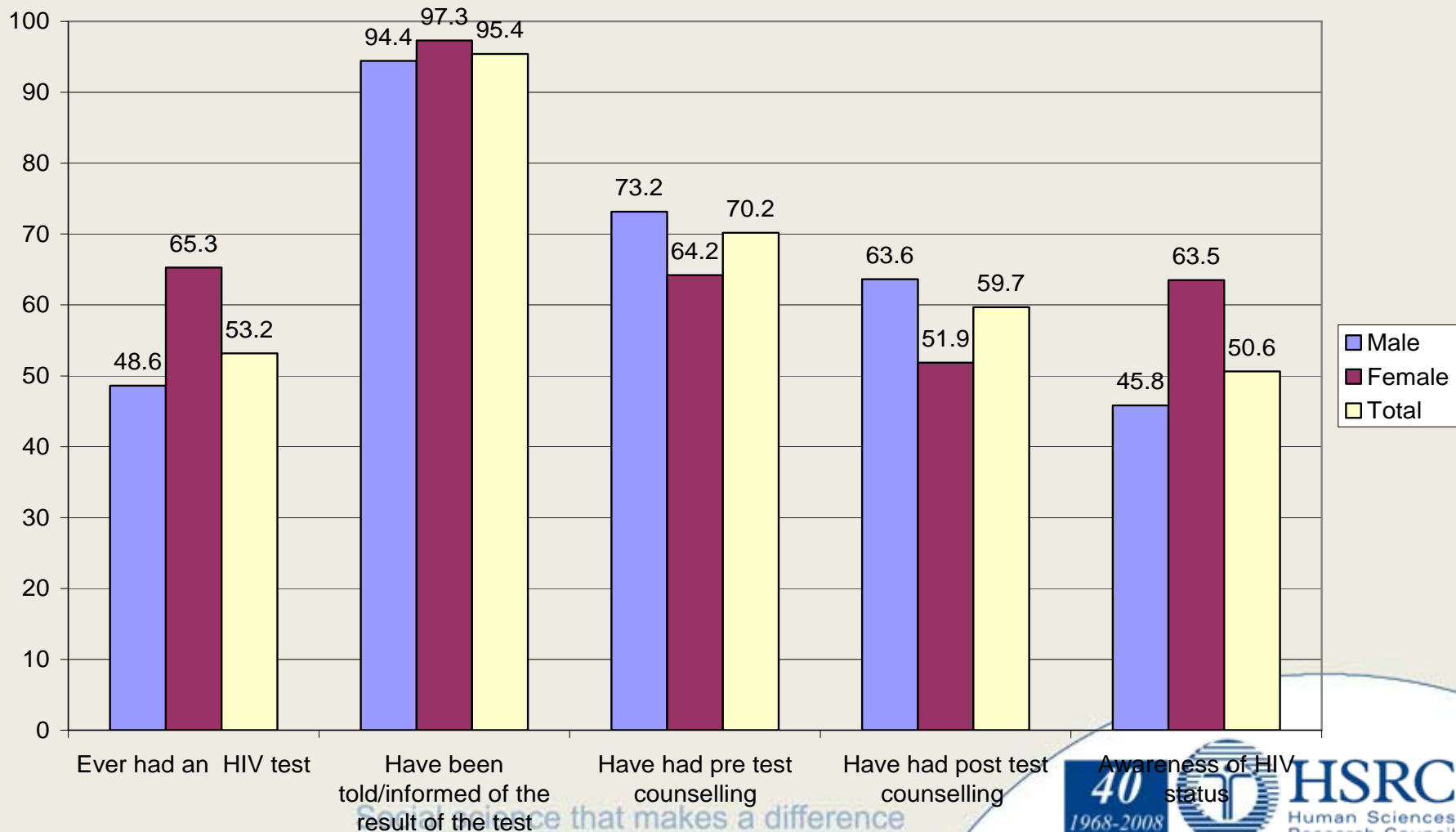


# Condom use during last sexual intercourse among respondents from private security services for different age groups by marital status and number of partners

Variable	Age group (years)					
	<24		25 - 49		>50	
	n	%	n	%	n	%
<b>Marital status</b>						
Single	243	65.4	778	53.2	2	50
Married or cohabit	45	26.7	1092	25.5	66	15.2
Widowed	0	0	19	31.6	5	0
Divorced or separated	4	50	103	32	9	11.1
<b>Number of partners</b>						
1 or no partner	226	54.4	1698	34	79	15.2
2 partners	35	74.3	207	50.7	3	0
> 2 partners	27	77.8	71	60.6	1	0



# Awareness of HIV Status among respondents from the private security sector



# HIV prevalence and sexual behaviour among respondents in the private security sector

Behaviour	N	HIV+ % CI	95%
Virgin	63	1.6	0.20-12.3
Abstinence	138	10.9	6.2-18.3
Sexually active	2018	16.5	12.2-22.0
Total	2223	15.7	11.5-21.3

# HIV status and age mixing among respondents in the private security sector

Sex	Partner more than 10 years younger than oneself	Age difference within 10 years	Partner more than 10 years older than oneself
<b>Males</b>			
% HIV prevalence	<b>20.2</b>	<b>16.7</b>	<b>10.0</b>
<b>Females</b>			
% HIV prevalence	<b>9.3</b>	<b>12.5</b>	<b>16.3</b>

# Knowledge of respondents' HIV status and condom use with their partners

Condom use	Know HIV status	
	n	%
Consistent condom use with regular partner in the past 12 months	2515	48.2
Consistent condom use with non-regular partner in the past 12 months	132	78.8
Consistent condom use with commercial sex partner in the past 12 months	9	66.7

# Comparisons of crude HIV prevalence levels in the two case studies compared to other employment sectors (see Colvin et al., 2006).

Dataset	N	HIV prevalence
<b>SASSETA study 2005</b>		
<b>Private security</b>	<b>2224</b>	<b>15.9%</b>
<b>Legal services</b>	<b>341</b>	<b>13.80%</b>
<b>Colvin workplace data</b>	<b>30 500</b>	<b>10.90%</b>
<b>Evian workplace study<sup>1</sup></b>	<b>28 509</b>	<b>14.50%</b>
<b>Platinum mine<sup>2</sup></b>	<b>11 339</b>	<b>24.60%</b>
<b>Educators study 2004/5<sup>3</sup></b>	<b>17 088</b>	<b>12.00%</b>
<b>HSRC 2002<sup>4</sup></b>	<b>1 478</b>	<b>13.00%</b>
<b>HSRC 2005<sup>4</sup></b>	<b>2 653</b>	<b>9.60%</b>
<b>Antenatal survey 2003<sup>5</sup></b>	<b>16 643</b>	<b>27.90%</b>

# Implications for understanding HIV in the military

- **The two case studies show the use of second-generation HIV surveillance approach in two employment sectors that have also been the subject of much speculation to have much higher levels of HIV prevalence than among the general population just like the military.**
- **The two case studies show underlying behavioural risk factors for HIV infection which are critical in development of responses to the HIV epidemic interventions to prevent new HIV infections.**
- **More importantly, the information is also useful for planning the roll out of ART treatment and care to members of the military who need them.**

# Conclusions

- From this presentation, it is clear that the use of the second-generation HIV surveillance approach should be encouraged in the military of a member state for several reasons:
  - It provides information on both magnitude and scope of the HIV epidemic
  - It allows the understanding of the drivers or risk factors underlying the epidemic
  - This can inform the responses that are taken in connection with the provision of ART and care for PLWHA who need them as well as interventions to both control and prevent new HIV infections
  - If repeated periodically, say once in every 5 years, it will provide a means for undertaking essential M & E of the responses which can further inform the further responses that need to be taken.

# Useful References

## A. Educators Study

- Peltzer, K., Shisana, O., Udjo, E., Wilson, D., Rehle, T., Connolly, C., Zuma, K., Letlape, L., Louw, J., Simbayi, L., Zungu-Dirwayi, N., Ramlagan, S., Magome, K., Hall, E., & Phurutse, M. (2005). *Educator Supply and Demand in the South African Public Education System: Integrated Report* [Report on Factors Determining Educator Supply And Demand In South African Schools funded and prepared for the ELRC]. Cape Town: HSRC Press.
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## B. Private Security Study

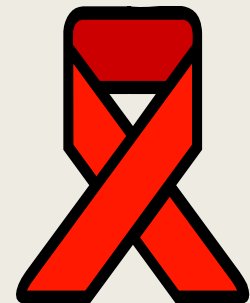
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## C. Whole South Africa

- Shisana, O., Rehle, T., Simbayi, L., Parker, W., Bhana, A., Zuma, K., Connolly, C., Jooste, S., Pillay, V. et al. (2005). *South African National HIV Prevalence, Incidence, Behaviour and Communication Survey 2005*. Cape Town: HSRC Press.



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